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Complete if Known Substitute for form 1449A/PTO Not Known 10/705564 **Application Number** INFORMATION DISCLOSURE Filing Dat 11/10/2003 STATEMENT BY APPLICANT First Named Inventor Silver et al. 2621 Group Art Unit (use as many sheets as necessary) ` D. Mariam Examiner Name 3 C97-050 CON6 Sheet of Attorney Docket Number

				U.S. PATENT DOCUMEN	TS	
Examiner Initials*	Cite No.1	U.S. Patent C	Kind Code <sup>2</sup> (il known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
OR		3,069,654		Hough et al.	12-18-1962	
		3,986,007		Ruoff, Jr.	10-12-1976	
		4,146,924		Birk et al.	03-27-1979	
		4,581,762		Lapidus et al.	04-08-1986	
	•	4,618,989		Tsukune et al.	10-21-1986	· · · · · · · · · · · · · · · · · · ·
		4,707,647	1.	Coldren et al.	11-17-1987	
		4,972,359		Silver et al.	11-20-1990	
		5,245,674		Cass et al.	09-14-1993	
		5,343,390	ļ	Doi et al.	08-30-1994	
		5,351,310		Califano et al.	09-27-1994	
		5,515,453		Hennessey et al.	05-07-1996	
		5,694,482		Maali et al.	12-02-1997	
~		5,703,960		Soest	12-30-1997	
2	-	5,828,769		Burns	10-27-1998	
		,				
,						

				PATENT DOCUMENTS				
Cite No.1	Foreign Patent Document				Date of Pr	blication of	Pages, Columns, Lines,	Т
	Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (il known)	Name of Patentee or Applicant of Cited Document	Cited Document MM-DD-YYYY	Where Relevant Passages or Relevant Figures Appear	T	
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					No.1 Office <sup>3</sup> Number <sup>4</sup> (if known) Cited Document	No.¹ Office³ Number⁴ (# known) Cited Document MM-D	No.¹ Office³ Number⁴ (if known) Cited Document MM-DD-YYYY  Date	No.¹ Office³ Number⁴ (if known) Cited Document Cited Document MM-DD-YYYY Passages or Relevant Figures Appear

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Substitu	ute for form 1449	B/PTO	•	Complete if Known		
				Application Number	Not Known	
INF	ORMATIO	N DISC	LOSURE	Filing Date	11/10/2003	
STATEMENT BY APPLICANT				First Named Inventor	Silver, et al.	
				Group Art Unit	2621	
(use as many sheets as necessary)			essary)	Examiner Name	D. Mariam	
Sheet	2	of	3	Attorney Docket Number	C97-050 CON6	

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Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
de		COGNEX CORPORATION, "Description Sobel Search," Natick, MA USA, 1998 but public before the above-referenced filing date.	
<b>Ø</b> _		COGNEX CORPORATION, "Chapter 7 CONLPAS," Cognex 3000/4000/5000 Programmable Vision Engines, Vision Tools, 1996, pp. 307-340, Revision 7.4 590-0136, Natick, MA USA	
0		HU, YU HEN, "CORDIC-Based VLSI Architectures for Digital Signal Processing," IEE Signal Processing Magazine, July 1992, pp. 16-35, 1053-5888/92, USA	
2		HU, et al, "Expanding the Range of Convergence of the CORDIC Algorithm," IEEE Transactions on computers, January 1991, pp. 13-21, Vol. 40, No. 1, USA	
do		Ballard, D.H., "Generalizing the Hough Transform to Detect Arbitrary Shapes," Pattern Recognition, 1981, pp. 111-122, Vol. 13, No. 2, Pergaman Press Ltd., UK	
de		LiN, et al., "On-Line CORDIC Algorithms," IEEE Transactions on Computers, pp. 1038-1052, Vol. 39, No. 8, USA	
No		WALLACK, AARON SAMUEL, "Chapter 4 Robust Algorithms for Object Localization," Algorithms and Techniques for Manugacturing, 1995, pp. 97-148 (and Bibliography pp. 324-335) PhD thesis, Unversity of California at Berkeley, USA	
\$		JAMES D. FOLEY, ANDRIES VAN DAM, STEVEN K. FEINER, JOHN F. HUGHES, Second Edition in C, Introduction to Computer Graphics, pp. 36-49, Addison-Wesley Publishing Company, 1994, USA	
de		LISA GOTTESFELD BROWN, A Survey of Image Registration Techniques, Department of Computer Science, Columbia University, New York, NY 10027, ACM Computing Surveys, Vol. 24, No. 4, December 1992	
de	_	GUNILLA BORGEFORS, <u>Hierarchical Chamfer Matching</u> : A Parametric Edge Matching Algorithm, IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 10, No. 6, November 1988	

Examiner Date 12.10-04 Signature Considered

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D. Mariam

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INFORMATION DISCLOSURE	Filing Date	11/10/2003		
STATEMENT BY APPLICANT	First Named Inventor	Silver et al.		
	Group Art Unit	2621		
(use as many sheets as necessary)	Examinar Nama	D. Mariam		

Examiner Name

**Attorney Docket Number** 

OTHER PRIOR	R ART -	NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
de		DANIEL P. HUTTENLOCHER AND WILLIAM J. RUCKLIDGE, A Multi-Resolution  Technique for Comparing Images Using the Hausdorff Distance, Department of Computer Science, Cornell University, Ithaca, NY 14853,	
8		I.J. COX AND J.B. KRUSKAL (AT&T Bell Laboratories, Murray Hill, NJ), On the Congruence of Noisy Images to Line Segment Models, IEEE, 1988	
de		DANIEL P. HUTTENLOCHER, GREGORY A. KLANDERMAN AND WILLIAM J. RUCKLIDGE, Comparing Images Unsing the Hausdorff Distance, IEEE Transaction on Pattern Analysis and Machine Intelligence, Vo. 15, No. 9, September 1993	
de		AKINORI KAWAMURA, KOJI YURA, TATSUYA HAYAMA, YUTAKA HIDAI, TADATASHI MINAMIKAWA, AKIO TANAKA AND SHOICHI MASUDA, On-line Recognition of Freely Handwritten Japanese Characters Using Directional Features Densities, IEEE 1992	
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		·	
Examiner			
Signature		Date Considered 12-10-04	

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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